

THE BENEFITS OF GREEN INFRASTRUCTURE IN CENTRAL OHIO

FRANKLIN COUNTY, OH

Over the next decade, Franklin County will experience an increase in the frequency and volume of rainfall—as much as 30% additional rainfall every spring. This will create more stormwater runoff, leading to flooding that impairs the functionality, health, and viability of our communities.

The Franklin County Risk Assessment ranks floods as the highest-rated threat to residents, disproportionately impacting underserved and at-risk neighborhoods. As Central Ohio experiences a surge in population and significant development by investors, the region will need to build more infrastructure that protects communities from the increased risk of flooding.

Gray infrastructure—tunnels, sewers, and treatment plants—has come to be the central approach to capturing and discharging stormwater downstream, but nature-based solutions—also known as green infrastructure—can play an important role, too.



From rain gardens to urban tree canopy, green infrastructure uses landscape features to capture and infiltrate rainwater where it falls. Green infrastructure reduces stormwater runoff, the leading source of urban water pollution. When properly incorporated and maintained, green infrastructure supports stormwater capture and water quality improvement while also providing broader community benefits.

Urban trees help to reduce stormwater runoff, while cooling nearby areas through shade and the release of water vapor into the atmosphere. Grasses and native plants, infiltration areas, and other nature-based elements can reduce exposure to environmental hazards, encourage physical activity, and increase community bonds, while improving air quality and providing other benefits.

In the same way that appraisers can determine the value of a home as a private asset, economists can determine the value of green infrastructure as a natural public asset using different economic tools. For example, green infrastructure can be valued through reducing the cost of harm to communities like flood damage, the cost of replacing nature's benefits with man-made infrastructure, or by creating an increase in property values. When we understand the value of nature-based solutions, we can make more effective decisions when building infrastructure.

ANNUAL PUBLIC BENEFITS: IN FRANKLIN COUNTY, AN ACRE OF RAIN GARDEN CREATES UP TO **\$74,000** IN CO-BENEFITS ANNUALLY.

REDUCING NOISE POLLUTION: \$540

Green spaces create natural surfaces that absorb sound, reducing the clamor of urban life.

FLOOD REGULATION: \$1,010

Green infrastructure directs and infiltrates stormwater runoff, reducing associated costs and damages.

BIODIVERSITY AND HABITAT: \$1,410

Native trees and plants provide food and shelter for insects and animals, supporting biodiversity.

NEIGHBORHOOD SCENERY: \$5,210

Planting natural green features often improves the visual aesthetics of a neighborhood. This not only has day-to-day benefits for residents' wellbeing but can also improve home values.

AVOIDED MANAGEMENT COST: \$64,170

Maintaining gray stormwater infrastructure management can be expensive. By developing lower-cost green infrastructure solutions, the burden on taxpayers is reduced.

CARBON SEQUESTRATION: \$180

Every ton of carbon emitted has a social cost. Native plants sequester carbon, providing benefits by reducing the damage of greenhouse gases—such as agricultural losses, impacts to human health, and increased disaster risk.

AVOIDED EMISSIONS FROM INFRASTRUCTURE: \$810

Producing and maintaining stormwater gray infrastructure can produce greenhouse gas emissions that could otherwise be avoided with green infrastructure.

COMMUNITY BACKYARDS

We can use green infrastructure to reduce stormwater runoff and protect water quality in our own backyards by capturing rain where it falls, keeping our waterways healthy and safe.

Community Backyards is an annual program by Franklin Soil and Water Conservation District that promotes water quality education for residents in Franklin County, Ohio. After taking the course, Franklin County residents can receive an incentive of \$50-\$250 to install a backyard conservation practice, such as rain barrels, compost bins, native plants & trees, and rain gardens.



RAIN GARDENS

These conservation practices can all reduce runoff, but rain gardens can capture the most stormwater and create larger co-benefits. The average rain garden developed in the Community Backyards program is 150 square feet, creating \$250 in social benefits every year.

RAIN BARRELS

Each time a 45 gallon rain barrel is filled in Columbus, it creates 31 cents in co-benefits through avoided emissions, stormwater management, and ground infiltration. If that water is used to irrigate a garden, the owner avoids 90 cents in water and sewage fees.

Since 2015, Community Backyards has provided close to 2,000 rain barrels to Columbus residents. If all rain barrels were filled at least once a year and the water used for irrigation, they will have provided, at a minimum, \$12,000 in savings to owners and benefits to the wider community.

FOR MORE INFORMATION

To apply for an incentive, visit the Community Backyards website:

<https://www.communitybackyards.org/resources-rain-gardens>